
Curing bladder cancer by replacing corrupted urothelium with differentiated hES cells

Grant Award Details

Curing bladder cancer by replacing corrupted urothelium with differentiated hES cells

Grant Type: Inception - Discovery Stage Research Projects

Grant Number: DISC1-08750

Project Objective: To develop a novel cell replacement therapy to treat human bladder cancer.

Investigator:

Name:	Philip Beachy
Institution:	Stanford University
Type:	PI

Disease Focus: Cancer

Human Stem Cell Use: Embryonic Stem Cell

Award Value: \$210,906

Status: Closed

Progress Reports

Reporting Period: Year 1

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Grant Application Details

Application Title: Curing bladder cancer by replacing corrupted urothelium with differentiated hES cells

Public Abstract:**Research Objective**

The goal of the proposed research is to use human embryonic stem cells to generate bladder epithelial progenitor cells that can be used to replace a cancerous bladder epithelium in vivo.

Impact

The long-term goal of the proposed research is to cure bladder cancer. Successful completion of this work may indicate that transplantation of differentiated pluripotent stem cells is a feasible cure.

Major Proposed Activities

- We seek to differentiate human embryonic stem cells into bladder epithelial progenitors. To this end, we will test stem cell culture conditions that promote the bladder epithelial progenitor state.
- Using a mouse model for bladder cancer, we will determine whether transplantation of differentiated human embryonic stem cells can functionally replace a cancerous bladder epithelium.

Statement of Benefit to California:

The long-term goal of the proposed research is to develop a cure for bladder cancer, one of the most prevalent cancers worldwide. Muscle invasive bladder cancer (MIBC) is uniformly lethal if left untreated. Surgical removal of MIBC is frequently followed by recurrence and/or a dramatic reduction in quality of life. Moreover, bladder cancer is the most expensive cancer to treat per patient. A definitive cure for bladder cancer therefore would have wide-ranging positive impacts.

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